



our mission

To improve the health of people of northern and central Australia and regions to the near north through multidisciplinary research and education by:

- Promoting a broad understanding of health that reflects underlying socioeconomic, environmental, health system and biological factors as determinants of health and disease.
- Conducting high-quality multidisciplinary research, research training and public health education with a focus on Indigenous, remote and tropical health.
- Advancing the local, national and international application of research findings to improve health.
- Advocating for research that will contribute to better health for people of the region.
- Building strong partnerships with community groups, service providers, policymakers, and other academic organisations.



our logo

The Menzies School of Health Research logo reflects the School's broad research agenda.

The warm and fluid circle shapes symbolize both the sun — representing the School's physical location — and a human cell.

The rhythmic edge of dots suggests the School's many Indigenous clients and collaborations.

The sharp line underscoring the 'm' of Menzies illustrates MSHR's rigorous scientific standards.

menzies school of health research

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2004 annual report

MENZIES SCHOOL OF HEALTH RESEARCH

The culmination of hard work and collective expertise of our staff and students has resulted in a productive and successful year for Menzies School of Health Research.

Our 2004 Annual Report gives a brief overview of research priorities and key research achievements, highlights our mutually supportive training and education programs, and demonstrates strong governance practices for the year ending 31 December 2004.

Detailed companion documents are available on our website www.menzies.edu.au.

Comprehensive reports available online include:

- 2004 Research & Education Report — detailed listing of MSHR research projects and education programs
- 2004 Financial Statements — complete audited financial statements

contents

2	MSHR: Leaders in Indigenous, remote and tropical health research
3	In Celebration of Excellence: 2004 highlights
4	Chairperson's Report
5	Director's Report
6	Collaborations & Major Partners
7	Tropical & Emerging Infectious Diseases Division
8	<i>Skin Health, Scabies, Streptococci and Rheumatic Fever</i>
9	<i>Ear and Respiratory Health</i>
10	<i>Malaria and International Health</i>
11	<i>Tropical Toxinology</i>
12	<i>Melioidosis and Emerging Infectious Diseases</i>
13	Chronic Diseases Division
14	<i>Chronic Diseases</i>
16	<i>Community-Based Interventions</i>
17	<i>Early Origins of Chronic Disease</i>
17	<i>Research Support</i>
18	<i>Substance Misuse and Mental Health</i>
19	Environments, Services & Populations Division
20	<i>Social and Physical Environments</i>
21	<i>Health-Related Services, Systems and Policies</i>
22	<i>Information Development and Capacity-Building</i>
23	Education & Training Division
24	<i>Public Health Coursework Program</i>
25	<i>Postgraduate Research Training</i>
25	<i>Short Courses</i>
26	Corporate Services
27	Governance
30	MSHR Publications
34	Research Funding
36	Financial Overview



mshr ● leaders in indigenous, tropical and remote health research and education

THROUGH AN INDIGENOUS FORUM, MSHR's Aboriginal and Torres Strait Islander staff and colleagues provide invaluable input communicating health priorities and values of Indigenous people to non-Indigenous researchers, facilitating research projects in a culturally appropriate manner, and determining how research findings can be taken back to the communities in the form of practical health benefits.

Researchers, in particular those new to the Territory, also seek Forum members' advice and expert local knowledge on living and working in remote Indigenous communities.

Joining the Indigenous Forum early next year will be Dr Ngiare Brown. Dr Brown was successfully recruited by MSHR to commence in January 2005 as Assistant Director Indigenous Health. One of Dr Brown's key responsibilities will be to facilitate the increased recruitment, retention and career development of Indigenous employees across MSHR.

MENZIES SCHOOL OF HEALTH RESEARCH is recognised as a national leader in Indigenous, tropical and remote health, and as an innovative centre for public health and research education.

Located on the Royal Darwin Hospital Campus in Darwin's northern suburbs, with small units in Alice Springs and Gove, we are uniquely positioned to conduct research which can underpin improvements in the health of Indigenous people and our neighbours to the near north in countries such as Papua New Guinea, East Timor and Indonesia.

Since commencing operations in 1985, MSHR has developed a strong track record in producing high-quality research, public health education, and research capacity-building.

Our research programs span infectious and non-communicable diseases, the social and environmental determinants of health, health systems and information systems.

These programs undertake sound, underpinning research into the causes and cures of health problems in our region, with a focus on identifying affordable and sustainable interventions to improve health outcomes.

We recognise the greatest health gains are to be made though exploring the intersections between priority health issues, determinants of health, and translation of research into practice and policy.

Our education and training programs focus on Indigenous and remote public health, taught by professionals who work directly in the field. We also seek to provide a stimulating environment for postgraduate students to develop research capacity.

We are further committed to increasing our research and education capacity through developing and fostering dynamic collaborations and partnerships with groups and organisations locally, nationally and internationally to help solve complex health issues in our region.

in celebration of excellence 2004 highlights

grants & fellowships

- Prof Kerin O'Dea was awarded a prestigious National Health and Medical Research Council Program Grant of \$7.1 million over five years — the biggest grant awarded to MSHR in its 19-year history.

In a collaboration with researchers from the University of Queensland and the University of Melbourne, this program will address chronic diseases, including diabetes, and renal and cardiovascular diseases, in Aboriginal and Torres Strait Islander populations.

- MSHR's excellent research performance attracted record funding of over \$10.6 million this year from the National Health and Medical Research Council, further boosting research into Indigenous, remote and tropical health.

awards & recognition

- Prof Kerin O'Dea was awarded the Order of Australia for 'service in the areas of medical and nutrition research, to the development of public health policy, and to the community, particularly Indigenous Australians, through research into chronic disease and prevention methods'.
- Prof Kerin O'Dea was named a Northern Territory finalist for the Australian of the Year Awards 2005.
- Assoc Prof Paul Kelly and Dr Geoff Isbister both received NHMRC Career Development Awards.
- Dr Paul Burgess was awarded the 2004 General Practice Education and Training Registrar Research Prize for his research into the health benefits of Indigenous land management.
- Dr Ric Price was awarded a Wellcome Trust Research Career Development Fellowship in Clinical Tropical Medicine.
- Dr Bruce Russell was awarded the Howard Florey Centenary Fellowship, a highly competitive award that supports the return of successful Australian researchers to Australia from overseas.
- Dr Alan Clough was awarded a Public Health Fellowship from NHMRC.
- Prof Kerin O'Dea was appointed to the Northern Territory Health Advisory Council. The Council has been established to advise on policy and service delivery to meet the complex and diverse health needs of Territorians.
- The paper 'Diabetes care and complications in remote primary health-care setting' by Louise Maple-Brown, Julie Brimblecombe, Don Chisholm and Kerin O'Dea, published in *Diabetes Research and Clinical Practice*, was acknowledged as one of the 10 most downloaded

articles from the journal *ScienceDirect* between January and June 2004.

- Dr Malcolm McDonald was awarded the 2004 Burns Alpers Award for Excellence in Medical Student Teaching at the Northern Territory Clinical School at Royal Darwin Hospital.
- Dr Allen Cheng was awarded the Murray Will Fellowship for Rural Physicians, Royal Australasian College of Physicians.



PHOTO: SKYSCANS

IN THEIR FIRST VISIT TO MSHR as Joint Patrons, His Honour Ted Egan, Administrator of the Northern Territory, and his partner Ms Nerys Evans attended the School's Annual General Meeting in August. Mr Egan and Ms Evans returned in September, spending several hours meeting key staff and learning more about MSHR areas of research.

Above, His Honour Ted Egan, Administrator of the Northern Territory and Ms Nerys Evans, with Professor Simon Maddocks, Chair MSHR and Professor Kerin O'Dea, Director MSHR.

special events, partnerships and visitors

- The new *Menzies School of Health Research Act* took effect 1 January 2004, formalising links between MSHR and Charles Darwin University. MSHR is now a controlled entity of Charles Darwin University, and functions as a school within the Institute of Advanced Studies.
- A MSHR Medallion was awarded to Dr Brian Reid for his book *The Menzies School of Health Research: Establishment, 1978–1997*, a historical narrative tracing the development of MSHR from its origins to its establishment in a new facility. Only 10 other MSHR Medallions have been previously awarded.
- National sporting champions joined medical researchers around the country to celebrate Research Australia 'Thank You' Day to highlight the achievements of medical researchers. Australian Hockey squad member and Darwin local Deborah Anstess was guest speaker at the MSHR 'Thank You' Day breakfast held in October.
- Media interest in MSHR activities saw increased local and national media coverage throughout the year. Stories featuring MSHR research included petrol sniffing and cognitive function, tea tree oil as a possible adjunct treatment for scabies, the link between rheumatic fever and scabies, the DRUID Healthy Lifestyle Study, the Healthy Skin Project launch at MSHR, and NHMRC successful-funding announcements.

chairperson's report

IN MY FIRST YEAR AS CHAIRMAN of the Board, I am honoured to present this Annual Report, which highlights the achievements of the Menzies School of Health Research (MSHR), an organisation that continues to grow in size and influence, providing strong local and national leadership on issues around Indigenous and tropical health research.

I would like to begin by recording, on behalf of the Board and MSHR, our gratitude to Mr Richard Ryan AO for his contributions and stewardship as Chairman of the Governing Board over the past seven years. This has been a period of considerable growth and change for MSHR, and his commitment throughout this time (and prior as Deputy Chair) has been significant in assisting the organisation to where it is today. Richard's talents are not lost to MSHR, however, in his new role as Chancellor of Charles Darwin University, and we look forward to a continued association with him.

It was a delight this year to see MSHR Director Prof Kerin O'Dea awarded an Order of Australia for 'services in the areas of medical and nutrition research, to the development of public health policy, and to the community, particularly Indigenous Australians, through research into chronic disease and prevention methods'. Later in the year Kerin also was named as a Northern Territory Finalist for Australian of the Year 2005. As the year progressed I could see why this recognition was so richly deserved, and the significance it provides as a means to promote the important issues surrounding the health and wellbeing of Indigenous Australians.

2004 has also seen the establishment of a new relationship between MSHR and Charles Darwin University. From 1 January 2004, the link between the two organisations was formalised and MSHR became a 'controlled entity' of the University. This new relationship allows MSHR to retain its independent Act of Parliament but provides an opportunity for MSHR and the University to promote a cooperative effort towards teaching and research in areas of mutual academic interest, to the

greater benefit of the Northern Territory.

The new arrangement has also meant the establishment of a revised MSHR Board which brings with it fresh challenges as we move ahead in seeking new opportunities and setting future directions for the School, whilst also trying to achieve a balance with the needs and expectations of Charles Darwin University. The new board members are profiled in this report, and I welcome them to MSHR and thank them for their contributions and commitment. I would also take this opportunity to thank retiring members of the previous Board for their support.

The Board has a responsibility to ensure MSHR continues its high-calibre research through good governance and by building partnerships that support the organisation. Strong partnerships are critical and the support MSHR has received over many years from the NT Government, the Menzies Foundation, the Vincent Fairfax Family Foundation, the Channel 7 Children's Research Foundation, and the Tudor Foundation are fundamental to our ongoing success. Sincere thanks to these partners and the numerous other private and corporate donors, and providers of competitive research grants, who are listed in this annual report and on the MSHR website.

The importance of these partnerships is also obvious when one reads the history of MSHR's establishment, *The Menzies School of Health Research: Establishment, 1978-1997*, compiled by Dr Brian Reid. It was a pleasure earlier in the year for the Board to acknowledge and thank Dr Reid for this important historical record by awarding him a MSHR Medallion.

2005 will also be a year of reflection and anticipation for MSHR as we celebrate our 20-year anniversary. Exciting plans are already in progress involving a Charles Darwin Symposium focusing on future health challenges for the next 20 years, and a reception to celebrate our anniversary at Northern Territory Parliament House.

I would like to thank my fellow board members for their counsel and support over the last year and once again I would like to congratulate the Director of MSHR, Professor Kerin O'Dea AO, and the staff and students of MSHR for their outstanding work and achievements.

PROFESSOR SIMON MADDOCKS



PHOTO COURTESY SKYSCANS

director's report

PRIMARILY AS A RESULT OF THE DREAMS and drive of a generation of Darwin residents, the aspirations of a new government determined to have a university, and the foresight of the Sir Robert Menzies Memorial Trust, the Menzies School of Health Research came into existence in 1985.

MSHR has gone on to prosper and attract talented and dedicated staff who have focused their interests on the health needs of northern Australia and our neighbours to the near north. It is this enthusiasm and commitment to research which continues to forge our reputation at the forefront of Indigenous and tropical health research in Australia and allows us to attract quality researchers from interstate and overseas. We have an outstanding professional team who not only turn their mind to complex public health issues, but who are also willing to face the challenges of living and working in the Northern Territory and the tropics.

Research in the Top End has particular challenges not experienced by our colleagues in the southern States — the distance between communities, the heat and extreme humidity, the rainfall, the difficulties associated with transport of equipment to remote areas, and of course, language and cultural differences. To manage this variety of challenges requires careful and meticulous planning and patience.

I am proud to report a major highlight for MSHR in 2004 was record NHMRC support of almost \$10.6 million. For the third year in a row we have earned over 50% of total NHMRC Indigenous health research funding.

MSHR also received its largest ever single grant in its 19-year history: a \$7.1 million program grant from the NHMRC to address chronic diseases, including diabetes, and renal and cardiovascular disease, in Aboriginal and Torres Strait Islander populations. This work will be carried out by MSHR in collaboration

with researchers from the University of Queensland and the University of Melbourne.

There are numerous highlights for the year and I urge you to take a close look at 'In Celebration of Excellence: 2004 highlights' on page 3 of this report, and the MSHR website which contains detailed information on all our research projects.

These successes have meant a 40% increase in our workforce over the last five years and we are now bursting at the seams. A major refurbishment, converting some of our laboratory space into offices, is almost complete and staff are expected to move into the new area in early 2005.

I would like to formally acknowledge the support of the Menzies Foundation and the valued contribution of Prof Simon Maddocks who is now Chair of the MSHR Board. We are very proud of our name and our partnership with the Menzies Foundation. The core funding provided from the Foundation allows us to continue our important research on Indigenous and tropical health and make a difference to those people and communities who benefit from MSHR research findings and treatments.

I would also like to single out Prof Bart Currie, who has long been a backbone of MSHR and who served as Acting Director for three months during my sabbatical leave towards the end of the year. Thank you.

As we move into our twentieth year, it is with great optimism that we look forward to the year ahead.

PROFESSOR KERIN O'DEA AO



PHOTO COURTESY SKYSCANS

collaborations & major partners

MSHR IS COMMITTED TO INCREASING our research and education capacity through fostering dynamic, productive partnerships with community groups, Indigenous stakeholders, health services, policymakers and government departments, as well as principal academic institutions.

Collaborations locally, nationally and internationally facilitate the important sharing of knowledge and the expertise and skills required to help solve complex health issues, and also influence policy and practice to improve health outcomes.

Partnerships also boost our public health and research training programs, including the recruitment of high quality research students, and ensuring public health courses are taught by people who work in that field.



PHOTO MSHR

PROFESSOR HELEN GARNETT, VICE-CHANCELLOR Charles Darwin University and **Professor Kerin O'Dea, Director** Menzies School of Health Research sign the Memorandum of Understanding between CDU and MSHR.

The Memorandum of Understanding covers the scope and purpose of the collaboration, including financial and administrative arrangements. Details of coursework teaching by MSHR, postgraduate and international research students and research grants and Commonwealth infrastructure schemes are also scheduled.

MSHR major partners and affiliations include:

● **CHARLES DARWIN UNIVERSITY, DARWIN**

As of 1 January 2004, MSHR became a school within Charles Darwin University's Institute of Advanced Studies, and a 'controlled entity' of the University. This new relationship allows MSHR to retain its independent Act of Parliament but provides an opportunity for MSHR and the University to promote a cooperative effort towards teaching and research in areas of mutual academic interest, to the greater benefit of the Northern Territory.

● **COOPERATIVE RESEARCH CENTRE FOR ABORIGINAL HEALTH**

MSHR is a core partner and centre agent of the CRC for Aboriginal Health, a major Commonwealth Government-funded program. The CRC for Aboriginal Health aims to promote high-quality research through the development of research partnerships, increased Aboriginal participation and control, as well as offering formal research training opportunities to Aboriginal people.

● **THE SIR ROBERT MENZIES FOUNDATION**

The Menzies Foundation is a non-profit, non-political organisation created in 1979 to promote excellence in health research, education and postgraduate scholarships for Australians. The Menzies Foundation played a major role in the establishment of MSHR and continues to provide ongoing financial support as well as representation on the MSHR Board.

● **NORTHERN TERRITORY GOVERNMENT DEPARTMENT OF HEALTH AND COMMUNITY SERVICES**

The NT Government provides substantial core funding support to MSHR as well as being an important collaborator on research projects and in the education program.

* Acknowledgement of MSHR collaboration partners may also be found on our website at www.menzies.edu.au and in our 2004 Research and Education Report.

tropical & emerging infectious diseases division

The Tropical and Emerging Infectious Diseases Division comprises five research programs investigating health issues important for our region.

Studies are targeted at improving prevention and treatment of specific illnesses, generally through seeking a better understanding of the underlying disease processes. Epidemiology, clinical observations and basic laboratory work are involved, with evidence-based approaches undertaken when possible.

The emphasis for the division is on collaboration with local health colleagues and experts outside the Northern Territory, in addition to cooperation between disciplines and across professional and cultural boundaries.



PHOTO COURTESY BART CURRIE

Division Leader • Professor Bart Currie

● skin health, scabies, streptococci and rheumatic fever

UP TO 60% OF CHILDREN IN some remote Aboriginal communities in northern and central Australia are estimated to be infected with scabies, a skin disease caused by a tiny burrowing mite. It is further estimated 300 million people worldwide suffer from scabies at any one time.

Scabies causes intense itching, with the resulting skin sores often infected with group A streptococcus (GAS), an incredibly complicated group of bacteria that thrive in the tropical environment of the Northern Territory and cause a massive range of diseases, including pharyngitis (strep throat), acute rheumatic fever, glomerulonephritis (a major kidney disease) and invasive diseases, such as streptococcal toxic shock syndrome and necrotising fasciitis ('flesh-eating' bacteria).

Using cutting-edge DNA technology, the MSHR Scabies Laboratory is currently investigating immune response mechanisms to both ordinary and crusted scabies (a severe infestation of the disease), and examining scabies mite genes involved in the development of resistance to existing treatments.

We are also investigating how streptococcal bacteria work to cause disease, and the possibility that streptococcal skin infections are linked with the very high rates of rheumatic fever recorded in remote communities in the Northern Territory. This work could have tremendous local and global implications for the prevention of rheumatic fever and for GAS vaccine development.

MSHR researchers are also involved in an innovative collaboration with the Cooperative Research Centre for Aboriginal Health involving various laboratory, clinical and public health projects known as the Healthy Skin Project.



PHOTO COURTESY HEALTHY SKIN PROJECT, MSHR

THE HEALTHY SKIN PROJECT, launched in May, aims to reduce scabies and skin infections in a number of communities in the East Arnhem region, and as a result, decrease the associated high rates of rheumatic fever, renal disease and other serious conditions.

Above, Healthy Skin team member Dr Ross Andrews, from the Murdoch Children's Research Institute, undertakes screening of children in Ramingining for skin sores, scabies and tinea.

key achievements

- Fifty thousand scabies mite cDNA clones have been sequenced in a gene discovery project to significantly advance the limited amount of molecular information available about the scabies mite. Studies are now utilising this vast new store of information to target the generation of novel products for specific and sensitive diagnostic assays.
- Work leading to expression and purification of scabies-mite recombinant antigens continues to provide an exceptional opportunity to obtain a clearer outline of immune responses important in normal scabies and assess differences in those with severe infestation (crusted scabies).
Recent studies have identified specific proteins that may play a role in the allergic response associated with scabies and crusted scabies.
- Tea tree oil is being used as an effective treatment for selected patients with severe scabies at Royal Darwin Hospital. Recent laboratory studies found tea tree oil to be highly effective in killing the scabies mite, and may prove to be a valuable alternate therapy to complement existing treatments.
- Molecular studies are underway to identify the mechanisms of resistance of scabies mites to current treatment. This work builds on previous work conducted in the Scabies Lab showing evidence of increasing resistance of scabies mites to permethrin and oral ivermectin.
- MSHR research team, in collaboration with international researchers in America and England, have demonstrated that the group A streptococcus population in tropical northern Australia is more diverse than elsewhere in the temperate world. Also, GAS bacteria from severe disease (flesh-eating bacteria) are molecularly diverse.
- Over 900 people enrolled in three Aboriginal communities in the Top End, and over 3500 throat and skin-sore swabs processed, in a study to determine if GAS skin infection leads to acute rheumatic fever. Data collection is expected to continue until the end of June 2005.

● ear and respiratory health

key achievements

- Continuation of a Territory-wide surveillance project monitoring drug resistance to antibiotics traditionally used to treat pneumococcal infections. The study will also measure antibiotic prescription rates and pneumococcal conjugate vaccination uptake. In the final year of the study, we will collaborate with Aboriginal communities from Central Australia to Katherine West, East Arnhem Land and the Tiwi Islands. We will also survey young children from over 30 child-care centres in Darwin and Alice Springs.
- Laboratory studies to determine if antibiotic treatment or vaccine effectiveness is compromised by high levels of respiratory bacterial pathogens have confirmed a strong correlation between the concentration of bacteria carried in the noses of children and severe ear disease. This relationship is not sufficiently specific to be clinically useful.
- Analysis of the impact of herd immunity following infant vaccination (pneumococcal vaccine Prevenar™) is underway within an entire Aboriginal community. We have also documented the dramatic shift in pneumococcal carriage serotypes seen after the introduction of this vaccine.
- We have successfully measured inflammatory markers in very small specimens of nasal discharge and middle ear discharge in remote Aboriginal children with chronic suppurative otitis media.
- Participation in the design and coordination of a large international multicentre study aiming to improve the management of chronic suppurative lung disease in Indigenous children. This study is just about to begin in northern and Central Australia, New Zealand, and Alaska (USA).
- Secured funding from the NHMRC to conduct two large projects in remote Aboriginal communities. One project will assess the effectiveness of maternal immunisation to prevent otitis media in infants. The other will assess the effectiveness of health promotion, active surveillance, and topical fluoride application to prevent dental caries.



PHOTO COURTESY AATAAC PROJECT, MSHR

MSHR EAR TEAM MEMBER, Dr JR Gadil (right), uses a flipchart to clearly explain the proposed course of treatment and follow-up examination process to a family, enrolling their child in a study in Nguuu on Bathurst Island.

This particular study successfully recruited around 270 children in our first Territory-wide controlled trial. The study is evaluating the best treatment for Aboriginal children diagnosed with acute otitis media — single dose azithromycin versus seven days amoxicillin.

THE EAR AND RESPIRATORY HEALTH PROGRAM seeks to understand the causes of severe respiratory conditions, and assess interventions that will prevent or treat these illnesses. Our team is made up of researchers from a variety of backgrounds including Aboriginal health workers, doctors, nurses, laboratory scientists and students.

Middle-ear infections (otitis media) are common among children in all populations, whereas eardrum perforation (severe otitis media) is not common.

In remote Aboriginal children middle-ear infection follows nasopharyngeal bacterial colonisation and often progresses to perforation of the eardrum. In two large surveys conducted in 2001 and 2003, we found that the risk of experiencing a perforation in the first two years of life was 50%. Around 20–25% of children still had a perforation at the time of their survey examination. Importantly, the prevalence of eardrum perforation was not greatly reduced by the introduction of the 7 valent pneumococcal conjugate vaccine. In addition, the majority of children who would benefit from antibiotic treatment had not been identified and treated prior to the survey.

Improvements in the primary health care services available to Aboriginal children may greatly reduce the severity of otitis media. Health care staff and policymakers are trying to strengthen an early childhood surveillance program. As well as addressing the high rates of ear disease, the program must also be able to identify and treat children with malnutrition, anaemia, diarrhoea, lower respiratory tract infections, skin infections, and dental decay.

Chronic obstructive pulmonary disease (COPD) affects nearly 15% of adult Aboriginal Australians living in remote communities. COPD (often used to describe chronic bronchitis and emphysema) is a progressive disease with limited treatments available once lung damage becomes severe. MSHR will shortly begin a randomised controlled trial assessing the effects of long-term antibiotics on the progression of COPD within Aboriginal communities.

● malaria and international health

EACH YEAR, MALARIA AFFECTS OVER 300

million people internationally, with up to two million deaths. Children and pregnant women are particularly vulnerable. Tuberculosis (TB) affects eight million people worldwide, contributing to two million deaths. Both diseases are major causes of morbidity and mortality in countries to our near north, including Eastern Indonesia, East Timor and Papua New Guinea.

The Malaria and International Health Program at MSHR has been conducting malaria and TB research in collaboration with the Indonesian Ministry of Health's National Institute of Health Research and Development (NIHRD) for the last nine years.

Our research program involves a wide range of projects aimed at improving diagnosis, treatment and prevention of malaria and TB, with a focus on evaluating new and affordable treatments for malaria, combination therapies for malaria, and improving our understanding and treatment of severe malaria.

A significant component of our work is in Timika, Papua, Indonesia, where drug-resistant malaria is a major problem. A joint NIHRD-MSHR team of over 15 research staff is based in Timika at Rumah Sakit Mitra Masyarakat (RSMM) Hospital undertaking malaria and tuberculosis studies in partnership with local health care providers.

We also undertake significant capacity-building activities in the region through ongoing skill exchange and training with our program partners.

key achievements

- Commencement of malaria research studies funded by the Wellcome Trust and National Health and Medical Research Council International Collaborative Research Grant to MSHR and Indonesian Ministry of Health.
- Dr Bruce Russell and Dr Rossarin Sawunarsuk joined the malaria team from Thailand to continue their important work with partners in Indonesia in malaria pathobiology and drug-resistant *Plasmodium vivax* malaria.
- In conjunction with our partners at NIHRD, RSMM Hospital and the local malaria control program, ongoing malariometric surveillance has been enhanced and expanded in order to document precisely the malaria-attributable morbidity and mortality in the Timika region. These epidemiological studies include cross-sectional surveys, collection of incidence data, a large cohort study, mosquito catching, and documentation of all malaria admissions to hospital. The Indonesian Ministry of Health are committed to change policy when the results of our current Artemisinin Derivative Combination Therapy Trial are available. Measurement of morbidity and mortality before and after the change of policy will allow the partners to determine whether widespread deployment of artemisinin combination therapies can reduce the rate of incidence and death from multidrug resistant malaria in Eastern Indonesia.
- Studies at the RSMM Hospital are defining the burden of *P falciparum* and *P vivax* malaria in pregnant women and new-born babies. In 2005 these will be expanded to investigate molecular and immunological parameters that contribute to the severe pathology of malaria in these vulnerable patients.
- Development and approval of protocols to undertake trials of arginine supplementation in malaria. These will commence in early 2005. With partners in Indonesia, Tanzania and the USA, we have previously shown that arginine deficiency occurs in malaria. This may be

associated with reduced ability to make nitric oxide, reduced ability to stop malaria-infected red cells from sticking to blood vessels and reduced ability to control inflammation in malaria.

- In vitro and molecular techniques have been established to investigate putative mechanisms of antimalarial drug resistance for both *P falciparum* and *P vivax*. Recent findings in collaborative studies



PHOTO COURTESY MALARIA AND INTERNATIONAL HEALTH PROGRAM, MSHR

THE NEW MALARIA RESEARCH BUILDING at Mitra Masyarakat Hospital in Timika, Papua, Indonesia, became operational in May 2004.

The building houses a joint research facility of the National Institute of Health Research and Development, Menzies School of Health Research and Mitra Masyarakat Hospital. It provides accommodation for 14 researchers, as well as office, computing and laboratory facilities.

Dr Enny Kenangalem, Dr Alison Ratcliff and Dr Hadjar Siswanto (left to right) enrol patients in the randomised trial of artemisinin-combination antimalarial therapy in Timika, Papua, Indonesia.

Chemotherapeutic studies of patients with uncomplicated malaria began in April 2004 and demonstrated very high levels of drug resistance to both *P falciparum* and *P vivax*. Investigations into alternative therapeutic strategies were initiated in July with the start of a large trial to determine the most suitable artemisinin-containing combination therapy for treatment of malaria in the Timika region of Papua. So far over 400 patients have been enrolled and treated with coartemether or artekin; the anticipated study size is 750 by mid-2005.

PHOTO COURTESY INTERNATIONAL HEALTH PROGRAM, MSHR



with research units in Thailand demonstrated the importance of amplification of the *Pfmdr1* gene in mefloquine resistance in *P falciparum*. Timika is unusual in harbouring some of the most chloroquine-resistant strains of *P vivax*. Novel *in vitro* assays are being used to determine the phenotypic response of *P vivax* to a variety of therapeutic agents. These studies will help to identify alternative agents that retain efficacy against these resistant strains, as well form a basis from which to identify molecular mechanisms of chloroquine-resistant *P vivax*.

- Completion of enrolment in a project aiming to determine if tuberculosis (TB) contributes to permanent lung damage in patients in countries with a high rate of TB and a lack of health-care resources. Interim analysis suggests that TB patients in Timika have restrictive lung disease which significantly impairs function at enrolment but improves with TB treatment.
- Completion of the first community-based drug resistance survey in Papua, Indonesia, which

demonstrates that multiple-drug resistant TB exists but at a relatively low rate (2% of TB patients). Our collaborative studies of drug resistance in our region aim to assist public health authorities to better plan and manage TB treatment.

- In East Timor, PhD student Nelson Martins continued his work on TB including studies of the epidemiological and health services implications of conflict, and factors affecting compliance with TB treatment in urban and rural areas. In 2005 we will conduct East Timor's first randomised controlled trial examining the effects of food as an incentive for TB treatment compliance.
- MSHR hosted several Indonesian colleagues as part of an ongoing commitment to training and capacity-building. Drs Enny Kenangalem, Muhammed Ardian, Hadjar Siswanto and Pak Govert Waramori all visited Darwin and took part in seminars and courses in statistics and epidemiology.

● tropical toxinology

WHILE ENJOYING OUR LAND AND COAST, it's important to remember we share this environment with some of the deadliest wildlife in the world.

With the assistance of Royal Darwin Hospital Emergency Department, MSHR continues to monitor the occurrence and type of jellyfish in the waters off the Top End of the Northern Territory. This data is important to ensure distribution of timely public health warnings.

We also continue to update our collection of snakes and define clinical syndromes from envenoming with each of the Top End's dangerous snake species.

key achievements

- Analysis of the MSHR database of over 600 jellyfish stings in Top End waters has shown important seasonal, weather and tidal correlations with confirmed stings from the major box jellyfish *Chironex fleckeri*.
- A new treatment for Irukandji syndrome using intravenous magnesium has been successfully used at the Royal Darwin Hospital following its first use in Queensland.
- Further elucidation of the 'brown snake paradox' — why neurotoxicity is uncommon despite the presence in brown snakes of a potent neurotoxin.
- Surveillance of the impact of the cane toad invasion on Top End snake-bite epidemiology.

● melioidosis and emerging infectious diseases

MELIOIDOSIS IS A POTENTIALLY FATAL disease caused by infection from the bacterium *Burkholderia pseudomallei*. The bacteria can be found in soil and surface water in tropical areas, usually after heavy rainfall.

Reported incidents of melioidosis are on the rise within endemic regions of South-East Asia and throughout Australia's Top End. In the Northern Territory, up to 40 people are infected each year, usually during the monsoonal wet season, causing death in one-fifth of all cases.

Those most likely to contract melioidosis have specific risk factors which affect their immunity. The most important risk factor is diabetes, followed by heavy alcohol intake, chronic lung disease (such as heavy smokers), and chronic kidney disease.

The high mortality rate from this disease, combined with the increase in number of diagnosed cases, makes it vitally important that our understanding of this serious tropical disease is improved.

Better recognition and treatment of melioidosis through our research over recent years has resulted in the death rate being halved in northern Australia — from 40% to 16%. The work of our team will continue to advance knowledge of the incidence, distribution and control of melioidosis, to further improve preventative measures, early diagnosis and effective treatment methods.



PHOTO COURTESY MELIOIDOSIS PROGRAM, MSHR

MSHR RESEARCH ASSISTANTS Mark Mayo and Susan Jacups collecting environmental samples of soil and water to test for the bacteria that cause melioidosis.

Recent research has confirmed that melioidosis bacteria is not uncommonly present in bore water in the Top End in a study investigating the importance of bore water as a source of melioidosis. Ongoing research looking at where the bacteria is in the environment and examining the diversity of this bacteria has major public health implications.

key achievements

- Use of new DNA fingerprinting methods developed specifically for the melioidosis bacteria to better understand why melioidosis can be such a severe disease and how it spreads from the environment to humans and animals. This project will hopefully result in new primary preventative measures. In a collaborative study of multilocus sequence typing of bacterial strains from the Northern Territory and South-East Asia it was found that the Australian bacteria were diverse but distinct from those overseas.
- Confirmed strong links between heavy monsoonal rain and increased severity of melioidosis. This study suggests that the more severe cases of melioidosis seen after heavy rains and winds may be from people inhaling the bacteria directly into their lungs, resulting in pneumonia and blood poisoning. This is of particular interest as most cases of melioidosis are thought to be acquired when the bacteria enters the body through soil or surface water contamination of cuts and sores.
- Continued research in the use of G-CSF (a naturally occurring substance produced by humans and animals in response to infections) for use as an adjunct to antibiotics in the treatment of severe melioidosis. Commencement of a randomised controlled trial of G-CSF in melioidosis patients in a collaborative study in Thailand.
- Publication of a proposed scoring system for use by clinicians to help identify patients at risk of death from melioidosis.
- A new rapid diagnostic test (PCR) is being evaluated in collaboration with colleagues at Royal Darwin Hospital and the Center for Disease Control, Atlanta, USA.

chronic diseases division

The Chronic Diseases Division undertakes collaborative research involving a wide range of disciplines, including epidemiology, biostatistics, psychology, social science, anthropology, biochemistry, nutrition and clinical medicine.

There is a strong focus on Indigenous populations and health problems which impose a significant burden of disease. We are interested in better understanding the causal pathways to diseases such as diabetes, kidney and heart disease, including the impact of bio-physco-social factors across the life course.

Through developing an understanding of the scientific basis of these lifestyle-related chronic diseases, we seek to develop community-based interventions to improve health outcomes.



PHOTO: MONSOON STUDIO

Division Leader • Professor Kerin O'Dea

● chronic diseases

IN AN ALARMING TREND, RATES of lifestyle-related chronic diseases, such as diabetes, continue to soar throughout Australia, particularly in Indigenous communities.

Relative to the overall Australian population, Indigenous Australians have a 15 to 20 years shorter life expectancy. Diabetes and related conditions, such as heart and kidney disease, are major contributors to this reduced longevity. Disturbing statistics reveal Indigenous people experience up to four times greater prevalence of cardiovascular diseases, more than 10 times the prevalence of diabetes in the 20 to 50 years age group, and develop end-stage renal disease at up to 30 times the rate of non-Indigenous people.

In short, Indigenous people are dying at a younger age from diseases which are mainly preventable.

This group of projects focus on investigating lifestyle-related chronic diseases, largely in Indigenous populations, to contribute to evidence on which to build positive models of health.

key achievements

CLINICAL STUDIES

- Data collection near completion in a study using a number of ultrasound-based, non-invasive techniques to look for early signs of heart disease in Indigenous people of remote, rural and urban regions, and people of Caucasian background living in Darwin.

First paper from the project has been published, a manuscript has been submitted summarising the findings of pulse-wave analysis in a remote Indigenous community, and preliminary findings for results of carotid intimal medial thickness studies have been presented.

This work is helping to identify early signs of the effects of diabetes and cardiovascular disease on blood vessels, which in the future may lead to earlier detection of disease.

- Commencement in September of a randomised trial to determine whether a dietary intervention of fish and fruit, three times a week, will decrease cardiovascular and other causes of mortality in patients with end-stage renal disease.

Initial recruitment of 63 participants in the Darwin region, with continued recruitment to occur in further dialysis units during 2005. If successful, this intervention will result in changes to clinical management of renal patients worldwide.



PHOTO COURTESY NORTHERN TERRITORY NEWS

MSHR CONDUCTED HEALTH CHECKS and provided individualised results to over 700 participants throughout 2004 in a study that aims to identify how many Aboriginal and Torres Strait Islander people living in Darwin and rural areas have diabetes and related conditions such as heart or kidney disease. Health checks were conducted on site at MSHR, and at various mobile locations around Darwin, including workplaces, family homes, health clinics and schools.

Pictured left is DRUID Project Manager Karin Dunne and Aboriginal Education Worker Margaret Anstess with student Jessica Mauboy undergoing a health check at Sanderson High School. The health check involves blood and urine samples, body measurements, questionnaires about eating and lifestyle habits, and an electrocardiogram for those aged 25 years and over. It is hoped the study will provide important new insights into the health and wellbeing of Indigenous people living in urban areas.

key achievements

COMPARISON OF DIABETES, HEART DISEASE AND RISK FACTORS ACROSS DIFFERENT AUSTRALIAN POPULATIONS

- Commenced follow-up studies to establish cases of cardiovascular morbidity and mortality from baseline data collected in two large Central Australian communities in 1987–88 and 1995 on a range of cardiovascular risk factors. This study examines a wide range of markers of cardiovascular disease risk in order to shed light on the relative importance of these risk factors and their interaction for Indigenous Australians.
- Analysis is underway of mortality data from cardiovascular disease among a Melbourne cohort of Australian-born residents and migrants from Mediterranean countries. This research is examining whether aspects of a traditional Mediterranean diet give protection from heart disease and stroke by lessening the impact of risk factors like diabetes, high blood pressure and high cholesterol. These findings have important implications for the wider Australian population.
- In research to better understand how diet can reduce the risk of cardiovascular disease, we are measuring biochemical markers of dietary quality, and comparing populations with very different diets and rates of cardiovascular disease: Indigenous Australians and migrants from the Mediterranean region.

To date, in Indigenous populations we have found plasma levels of carotenoids to be very low, consistent with very low intakes of fresh fruit and vegetables. This may contribute to their high cardiovascular disease rates. In contrast, plasma levels of carotenoids are high in migrants from Southern Europe, consistent with their high intakes of fruit and vegetables, which may contribute to their low cardiovascular disease rates.

- Analyses of our extensive cross-sectional and longitudinal databases are being conducted to identify the range of body mass index (BMI) most consistent with prevention of diabetes and related conditions in Indigenous populations.
- Providing primary health care workers with BMI ranges associated with minimal disease risk for Indigenous people is of great importance as standard BMI ranges for European populations are not necessarily appropriate for other populations.
- We are developing an extensive database on novel risk factors for cardiovascular disease in several Aboriginal and Torres Strait Islander populations, as conventional risk factors (smoking, cholesterol and blood pressure) while important, do not explain the very high rates of premature cardiovascular disease in these populations.



PHOTO COURTESY BARRY SMPSEY (deserexpress.com.au)

DR ALEX BROWN, Senior Research Fellow MSHR, leads a growing team of staff employed across a range of cardiovascular research projects based in Alice Springs. MSHR's Central Australian Unit is developing a program of collaborative and multidisciplinary research primarily concerned with exploring the experience of cardiovascular disease among Indigenous Australians. Current research activities include:

- assessing the quality of care for people following heart attacks within Central Australia to determine if Aboriginal clients are receiving equitable care (funding has been secured to extend this project across the entire Northern Territory in 2005)
- determining barriers to high-quality care for people suffering heart attacks in the Alice Springs region
- follow-up screening of Indigenous participants across four Central Australian communities to determine the most important predictors and key contributors of cardiovascular disease to identify key targets for primary prevention

Clinical and community-based work is also undertaken by the team as a satellite site in a project exploring the potential link between group A streptococcus and acute rheumatic fever (see Tropical & Emerging Infectious Diseases Division).

Dr Brown will also undertake postgraduate study in 2005 looking at the link between psycho-social stress and depression, and the development of cardiovascular disease in Indigenous men from Central Australia.

Factors that increase inflammatory load (such as infections), and oxidative stress (such as low intake of antioxidants from fresh fruit and vegetables) are likely to amplify the impact of existing risk factors and help explain the epidemic of cardiovascular disease in Indigenous populations.

- Developed data collection, systems analysis methodology and commenced data collection in a project that aims to fill the gap in the process and outcomes of cardiovascular care for patients suffering heart attack or unstable angina in the Northern Territory. In the future, information gained from this project will lead to sustainable public health policy to improve health care of Indigenous people with cardiovascular disease.

● community-based interventions



PHOTO COURTESY GALIWIN'KU HEALTHY LIFESTYLE PROJECT, MSHR

IN COLLABORATION WITH GALIWIN'KU COMMUNITY and food-related businesses, MSHR commenced a review of the factors that have shaped local food supplies involving interviews with community elders and archival information pertaining to food supply.

This research aims to provide greater insight into the relationship between food-related policy, store practices and dietary patterns, and ultimately will identify actions to facilitate sustained dietary change.

Valerie Maramangunhawuy and Jacko Gurrudunbuy show new fruit and vegetable display units placed at the entrance of their local store to encourage community members to eat healthy foods.

POOR NUTRITION IS ONE OF the main factors causing high rates of diabetes and heart disease in Indigenous people. Obesity is one of the main risk factors for diabetes and cardiovascular disease, and is associated with poor diet, lack of exercise and many social factors.

This program aims to develop a framework for the implementation and evaluation of sustainable and transferable community-based interventions to reduce the risk and impact of diabetes and related chronic disease in Indigenous communities. The focus on interventions is to improve the quality of diets, increase physical activity and reduce smoking, and to provide comprehensive primary health care, including pharmacotherapy of people with, or at risk of, chronic disease.

The interventions are based on a culturally acceptable model of traditional hunter-gatherer diet and lifestyle: a high-quality diet derived from a wide variety of highly palatable, minimally processed plant and animal foods, with physical activity built into daily routines, and a rich spiritual life fostered.

key achievements

- Commenced final follow-up screening to determine the impact of community-based interventions developed and implemented in Galiwin'ku to reduce high levels of chronic diseases.

Baseline screening conducted in 2002, acted as a stimulus to the community to begin to develop interventions, including a household garden project, an exercise program, and ways to reduce smoking. Funding was secured this year from the Department of Health and Ageing to support ongoing healthy lifestyle intervention projects.

- Development of an analysis coding chain to assess the impact and outcomes of community activities and interventions on individual behaviour, in a project that seeks to understand how psycho-social and social responses to intervention programs affect behavioural change.
- In consultation with community advisers, members, mala elders, and Batchelor Institute of Indigenous Tertiary Education, two participatory-action workshops held in Galiwin'ku identified areas of training required to support the development of health-promoting projects in the areas of food preparation.

This work forms part of a project to develop sustainable community-based interventions to reduce the risk of diabetes by reducing the age-related weight gain in young Aboriginal adults under the age of 30 years.

- Established a transdisciplinary research team involving three Institute of Advanced Studies schools (Charles Darwin University) and Indigenous communities in a project that commenced in 2004 and aims to evaluate the impact of involvement in land-management activities on the health of Indigenous people.

● early origins of chronic disease

THE FLAGSHIP PROJECT OF THIS PROGRAM is the Aboriginal Birth Cohort Study, the first, longest and largest birth cohort of an indigenous population in the world.

Established in 1987, this prospective longitudinal Aboriginal birth cohort examines the influences of maternal health and birth size on childhood growth, nutrition, morbidity and risk factors for chronic disease in childhood. Of specific interest is the identification of physical processes that begin in childhood and influence adult health, and lifestyle, social and emotional wellbeing factors that affect health.

Of the 686 children recruited to Wave 1 of the study, 572 underwent follow-up screening between December 1998 and January 2001 (Wave 2), giving the ability to link childhood data to detailed maternal and perinatal data.

Preparations are underway to commence Wave 3 of the study, which will examine traditional and novel heart disease risk factors in the group, as well as including physical, oral and mental health examinations which will be linked to Wave 1 and Wave 2 data.

key achievements

- Recruited Behavioural Scientist Dr Wendy Gunthorpe to develop an instrument to look at psycho-social factors (the 'Strong Souls' checklist) to enable our research team to look outside the biomedical model and to relate factors like resilience and emotional wellbeing to health.
- Developed exciting collaborations with Australian Research Centre for Population Oral Health, which will see Dentist Dr Lisa Jamieson joining the research team for Wave 3, looking at oral health and potential risk factors to chronic disease.
- Preparations are underway for the Wave 3 study to commence in 2006. Participants within the cohort will be 16 to 18 years of age. Some of them are known to be parents by now, leading to the opportunity to explore intergenerational effects.

● research support

MSHR MUST COMPETE LOCALLY, NATIONALLY and internationally to secure grants to fund our research and education programs. Funding agency requirements for submissions and ongoing management of grants are diverse and require careful attention to detail.

The Research Support Group provides invaluable administrative support to researchers: assisting with grant applications and reporting requirements, ethics applications, and with the submission and collection of publications. In addition, the group also provides administrative support to the local human research ethics committee and the Darwin Region Biosafety Committee.

Innovative administration strategies are now being implemented as research becomes less institution-specific and collaborations across disciplines and institutions increase the complexity of research administration.

key achievements

- Devised a common application form and streamlined the ethics-consideration process between the Human Research Ethics Committee of the Northern Territory Department of Health and Community Services and MSHR, and Charles Darwin University.
- Coordinated the Internal Research Workshop, held in November, to provide an opportunity for MSHR staff and students to share information regarding current and future research programs. This session also provided a discussion forum for issues relevant to Indigenous and tropical health research, and identified potential inhouse collaborations for future funding opportunities.
- Established and implemented strategies and administrative processes to access research infrastructure funding now available to MSHR as a result of our new relationship with CDU.

● substance misuse and mental health

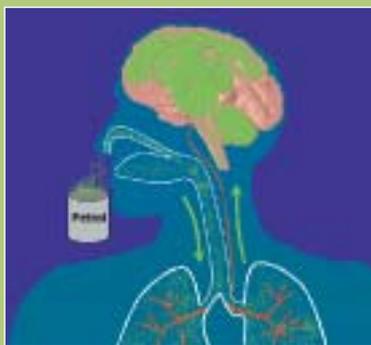
MSHR IS INVOLVED IN A SMALL but developing program of research investigating the health impact of petrol sniffing, and kava, cannabis and multi-substance abuse in remote Indigenous communities in the Northern Territory.

We are also concerned with cognitive research in Aboriginal populations, focusing on the development of culturally acceptable tools to test brain function.

In the coming year, work will be conducted into the feasibility of establishing a collaborative 'centre of excellence' for the study of the addictions and addictive behaviour in tropical Australia and the Asian region.



KEY RESEARCH FINDINGS highlighting the role of abstinence in recovery from petrol-related brain damage was published in 2004.



BRAIN DAMAGE ARISING FROM PETROL SNIFFING was often thought to be permanent. Our cognitive studies have found that much of the brain impairment induced from petrol sniffing is recoverable with abstinence. This research is the first prospective study in the world to show this.

These findings provide important impetus for affected individuals and their families, as well as educators, community leaders and policymakers to design health programs that encourage abstinence from petrol sniffing.

key achievements

- Documented for the first time the likely extent of cannabis use in some remote Aboriginal communities amongst those aged 13 to 36 years. This work confirmed previous reports alerting health practitioners and policymakers to the rapid rise in the use of cannabis in isolated communities in the Top End of the Northern Territory.
- Developed an education resource focusing on neurological aspects of drug actions with emphasis on cannabis and inhalants. This resource is now being used in similar settings by the Northern Territory Department of Health and Community Services.
- Collaboration with University of Sydney researchers who are undertaking a prospective evaluation of a community-driven initiative to intervene in harmful patterns of substance misuse in remote communities of the Northern Territory. MSHR involvement allows a seamless link with the study of cannabis carried out by MSHR.
- Increased community participation in research investigating neurological, cognitive, social and psychiatric abnormalities associated with the recreational abuse of petrol, alcohol and cannabis.

This project is also developing culturally appropriate cognitive assessments that are sensitive to brain changes associated with substance abuse and mental illness, for use in Indigenous Australians.

environments, services & populations division

The recently created Environments, Services and Populations Division includes researchers and professionals from a wide range of disciplines including epidemiology, biostatistics, anthropology, sociology, medicine, nursing, law, health promotion and environmental science. This diversity facilitates an exciting array of interdisciplinary health research.

Major areas of research address social and physical environments; health-related services, systems and policies; and the development of health-related information. We also undertake significant capacity-building activities.

We address the complexities of Indigenous health by conducting high-quality research to build an evidence base to guide policy and practice for government and non-government agencies.



Division Leader • Assoc Prof Joan Cunningham

● social and physical environments

THIS RESEARCH EXPLORES THE RELATIONSHIP

between a range of socioeconomic and environmental factors, and their effect on health outcomes by focusing on important underlying determinants of health.

Current projects focus on health infrastructure, housing, hygiene and the relationship between racism and health.

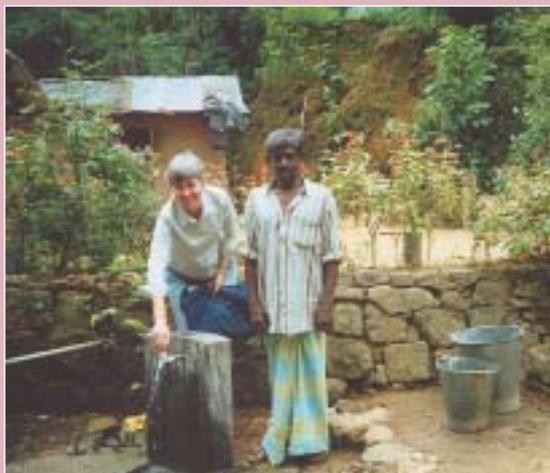


PHOTO COURTESY HYGIENE STUDY, MSHR

AS PART OF HER PHD STUDIES to improve hygiene and children's health in remote Indigenous communities, Liz McDonald attended a Hygiene Behaviour Change Workshop in Kandy, Sri Lanka.

Liz aims to identify the complex array of physical and social barriers which may hinder people and families living in remote communities in the Top End of Northern Territory from achieving safe levels of hygiene.

This work will better inform the development of hygiene prevention programs that are effective, sustainable and that do not detract from the richness of Indigenous culture.

Liz's work is just one of the projects conducted by an excellent group of very productive research students spanning all programs of the Environments, Services and Populations Research Division.

key achievements

- Acquired and assessed eight data sets from four Northern Territory Government departments, and linked this data at the community level, as part of an ongoing project exploring the relationships between socioeconomic and environmental factors, health-care access and utilisation, and community health in Aboriginal communities in the Northern Territory.

Drawing together a wide range of available data sets at common geographic levels, will aid government and non-government agencies to prioritise policy development and program initiation, and will focus effort on the most important underlying determinants of health.

- Commenced community health centre audits and performed ongoing data collection in participating remote communities across the Northern Territory, in a study to determine the impact of improvements in household infrastructure on the health of children.

This research will inform the development of infrastructure projects in remote communities across Australia. It also seeks to define, for the first time, the relationship between specific components of household infrastructure and healthy living practices. Results will also be of value in similar settings internationally.

- Undertook collection of dental data across five communities in the Northern Territory in an ongoing project into the feasibility, cost and impact of fluoridation of water supplies in remote Indigenous communities.
- Major data collection completed through the DRUID study (see Chronic Diseases Division), towards an investigation examining the association between racism, primarily as a form of stress, and a range of health outcomes for Indigenous Australians living in the Darwin area.

This work represents the first epidemiological study of racism and health among Indigenous Australians. It will enable us to improve our understanding of this exposure and its impact on Indigenous people. Related work will help identify strategies to reduce racism and its consequences.

- Redevelopment of the Northern Territory Indigenous Community Housing Survey, including the development of survey methods, housing survey forms, a database to facilitate maintenance reports, data entry protocols, and a training workshop for surveyors.

The redeveloped survey has increased the capacity of the Northern Territory Government to meet national reporting requirements, and improved the amount and quality of maintenance and other information available to local housing organisations.

● health-related services, systems and policies

THE ORGANISATION AND DELIVERY OF health and social services, and the systems and policies that underpin them, are critical components to achieving good health outcomes.

We are interested in examining the quality of available health care, to establish how health services might be improved and made more efficient and effective.

Identifying barriers to accessing services and care is of particular interest to our research team, as it represents an important factor limiting improvements in Indigenous health.

Effective health services, systems and policies alone are not the sole contributors to achieving good health. Other government services, such as education, employment, training, housing, planning and environment, play an important role in determining the health of Indigenous and other Australians. As such, our program also takes a macro-level approach, looking beyond health services, to determine what effect non-health policy and government systems have on health and wellbeing.

Findings from our research help inform policymakers, and shape the ways in which health care and other services will be delivered in the future.



AUDIT AND BEST PRACTICE FOR CHRONIC DISEASE (ABCD) team completed a second round of health service audits in participating health centres across the Top End in a project aimed at improving the quality of primary health care for people with and without chronic disease living in remote communities. Results of the performance review are used by each health service to identify specific areas for improvement and to develop a twelve-month plan to implement change. The second round of performance reviews found that the first quality improvement cycle was effective in improving clinical performance.

Above, ABCD Senior Indigenous Project Officer Lyn O'Donoghue, Project Manager Michelle Dowden (seated), and PhD student Damin Si.

key achievements

- Funding secured to extend the Audit and Best Practice for Chronic Disease project (see above right) to up to 50 health centres across several States. Further health centres have sought MSHR involvement, in part as a result of our recognition as quality improvement facilitators for the national Continuous Improvement Program in Aboriginal Community-Controlled Health Services.
- Significant progress in an integrated, multidisciplinary research program comprising a number of discrete studies that aims to reduce key barriers to accessing kidney transplants for Indigenous people with end-stage renal disease. Data from a national survey of nephrologists was collated and analysed; a major report on remote area renal services was completed for the Australian Health Ministers' Advisory Council; and ethics approval and other logistical details completed in preparation for the patient education and interview component of the project.
- Publication of two papers, with other manuscripts submitted late in the year, resulting from research investigating health service performance for Indigenous people with cancer. This project is continuing to investigate health service and other factors responsible for lower cancer survival rates for Indigenous patients in an effort to improve diagnostic and therapeutic services to reduce cancer mortality.
- In collaboration with Royal Women's Hospital, Melbourne, MSHR staff will provide epidemiological advice and organise a study in the Top End to measure the prevalence of cancer-causing genotypes of human papillomavirus in Australian Indigenous and non-Indigenous women. This project commenced late 2004.
- A clinical audit of the Chronic Disease Self Management project participant files in four target communities was undertaken for Katherine West Health Board to assist with improvements and modifications in their activities.

● information development and capacity-building

QUALITY HEALTH-RELATED DATA AND information are sought by policymakers as the foundation for shaping effective policy and practice. Yet a 'gap' exists between the large data sets compiled and the use of this data as a relevant, quality-evidence base of value to policymakers.

We work to bridge this gap by improving the quality and availability of routinely collected data. We also undertake analysis of large data sets in an effort to make better use of this health-related information to inform policy and practice.

Our researchers have developed a reputation as leaders in this area, and are in high demand to act as advisers to government agencies by serving on technical reference groups.

We also seek to attract more researchers into the area through a population health capacity-building program in collaboration with the University of Melbourne. The major focus of this program is to develop a critical mass of Indigenous and non-Indigenous researchers who combine advanced quantitative skills with a keen understanding of the needs of policymakers, in order to advance the quality and capacity of research aimed at improving the health of Indigenous Australians.

We further build capacity by working in conjunction with the Education and Training Division to develop short courses to reflect MSHR's unique research focus.

key achievements

- Provided advisory support on data collection and development to a range of local and national government departments and agencies, such as Australian Bureau of Statistics, Commonwealth Health Department, Australian Institute of Health and Welfare, the National Health and Medical Research Council and various Northern Territory Government departments.
- Staged the first academic course in Australia to be devoted exclusively to social determinants as they relate to Indigenous health, drawing extensively on the involvement of Indigenous presenters. The course attracted 70 participants from throughout Australia, with a second Social Determinants of Indigenous Health course planned for June 2005.
- Several teaching modules developed by MSHR were trialed in a project managed by La Trobe University to develop an on-line, continuing education course for front line public health and primary health care practitioners. The course is designed to enhance skills, such as organising, displaying and understanding epidemiological data, for those who use health-related data.



PHOTO COURTESY, CIPHER PROGRAM, MSHR

FOUR POSTDOCTORAL FELLOWS AND THREE PHD STUDENTS were recruited in 2004 as part of an extensive program of research and development with a focus on policy-relevant issues in a capacity-building program in collaboration with the University of Melbourne. A national expert reference group was also convened to advise on research priorities.

Above are postdoctoral research fellows (left to right) Dr John Condon, Dr Juan Baeza, Dr David Thomas and Dr Kylie Cripps. (Absent are PhD students, Yin Paradies, Matthew Stevens and Mark Lutschini.)

In 2005, up to two new research fellows will be appointed.

education & training division

The Education and Training Division provides postgraduate education and training opportunities to health professionals. MSHR expertise in Aboriginal, remote and tropical health is reflected in the education and training offered by or supported through the division.



PHOTO COURTESY EDUCATION & TRAINING DIVISION, MSHR

Division Leader • Assoc Prof Paul Kelly

THE EDUCATION AND TRAINING DIVISION comprises a small dynamic team responsible for:

- coordination of the Public Health Coursework Program, comprising the Graduate Certificate, Graduate Diploma, Master's and Professional Doctorate
- oversight of postgraduate research students studying at MSHR including providing specific skills training to these students
- organisation of short courses for the benefit of MSHR staff, students and the wider community of health professionals



THE 2004 WINNER OF THE annual Val Asche prize for academic excellence in the Public Health Coursework Program was Ms Vivienne Hobson. Vivienne is the Program Director of the Nutrition and Physical Activity Program with the Northern Territory Department of Health and Community Services. She studied for the Master of Public Health on a part-time basis and consistently achieved very high grades in all areas of her studies, making her a worthy recipient of this prize.

● public health coursework program

The Public Health Coursework Program is accredited through Charles Darwin University (CDU) and enjoys an excellent reputation with particular emphasis on support to students. MSHR is also a member of the Australian Network of Academic Public Health Institutions (ANAPHI), a national organisation of 19 universities and public health institutes delivering public health coursework programs.

The coursework program continues to attract high quality public health practitioners to the Territory, although the majority of students are Territorians. Many local students are employed by the Northern Territory Department of Health and Community Services and the program provides a significant professional development role for health service providers in the Northern Territory. Partnerships with the Cooperative Research Centre for Aboriginal Health (CRAH) and the Charles Darwin University allow MSHR to attract Indigenous students and provide support mechanisms for study opportunities.

Once again, there was consistent growth in the coursework program with an increase in enrolments at the Graduate Certificate level and the international (full-fee paying) category. Student numbers at the Graduate Diploma and Master levels were maintained.



PHOTO COURTESY EDUCATION AND TRAINING DIVISION, MSHR

MSHR INTERNATIONAL PHD STUDENT Dr Nelson Martins, became one of only 21 people worldwide to receive a prestigious WHO Tropical Disease Research Scholarship. He is the only scholarship holder in the whole of the Asia and Pacific region and the only scholar studying tuberculosis in the 2004 scholarship round.

His PhD studies are examining the ways in which TB control has been practised in Timor Leste, the effects of conflict in 1999, and the factors which enable and hinder a patient's ability to complete the course of treatment for this life-threatening disease.

In addition to his studies, he continues to teach in the Faculty of Public Health at the Universidade da Paz in Dili, building the next generation of the public health workforce. Above, Dr Martins (left) teaches research assistants in Motael Clinic, Dili.

Dr Martins will be Timor Leste's first medical graduate with a PhD when he completes his studies in 2006.

● postgraduate research training

Postgraduate research students are supervised by senior academic staff at MSHR in collaboration with researchers at other institutions when appropriate. Student research topics span the wide research interests of MSHR, from molecular biology to population health and health service research.

● short courses

A dynamic and self-sustaining short course program which focuses on skills development for the broadly defined Indigenous public health workforce (policymakers, service providers, researchers and research students) is well established. The program is based on stakeholder needs and on MSHR's areas of strength in tropical, remote and Indigenous health. In addition to attracting participants from the wider health professional community, short courses play an important role in MSHR staff recruitment, retention and professional development.

Indigenous students were specifically targeted for the short course Social Determinants of Indigenous Health. The majority of presenters and at least 14% of participants were Indigenous.

key achievements

- Ongoing funding from the Population Health Education and Research Program (PHERP) Innovations Funding to support innovation and flexible delivery of the Public Health Coursework Program. Funding from this source covering the period 2001–05 stands at \$2 million.
- Achieved 75 enrolments each semester in the Public Health Coursework Program, including 29 new enrolments in Semester 1 and 11 in Semester 2. Of the 12 international coursework students, five studied full-time in Darwin with the remainder studying part-time from their home country. Most of the latter category are involved in collaborative research with MSHR in Indonesia, providing an important link with education and research activities.
Four students undertook their research treatise in the Master of Public Health (Coursework and Treatise) and one student graduated with this option.
Twenty students graduated across all levels throughout 2004.
- Ten new postgraduate research students, including one international student, with a total of 33 students enrolled through seven universities. There were five PhD and two Master of Science graduates. Four of these research students accessed three coursework units to gain essential research skills.
- Seven successful and well attended short courses were offered during 2004.
- A survey of coursework graduands was conducted resulting in statistical data that was used as part of the funding submission to PHERP.
- Developed an appropriate support program in conjunction with the CRCAH for the professional development of Indigenous MSHR staff with the first student enrolled in the Graduate Certificate in Public Health.
- Co-authored an ANAPHI publication, *Building Capacity to Improve Public Health in Australia*.
- The short course Social Determinants of Indigenous Health was delivered by nearly 30 experts in their field to a record number of participants (70) from all over Australia.
- The first PhD student was enrolled with the University of Queensland and MSHR academic staff were granted honorary appointments under the new agreement with the University of Queensland.
- MSHR academic staff were accorded the opportunity to apply for adjunct appointments with CDU under the terms of the new agreement.
- Dr Richard Chenhall was awarded an NHMRC Training Fellowship in Aboriginal and Torres Strait Islander Health Research for four years at the National Drug Research Institute, Curtin University.
- A selection process was conducted for a coordinator for the Public Health Coursework Program: Dr Kate Senior (anthropologist) was appointed and will commence in June 2005.

corporate services

THE CORPORATE SERVICES TEAM AIMS to provide robust and cost-effective administrative and business support services to allow MSHR to meet its research and education objectives.

In the 2004 year, MSHR income was 14% higher than that achieved in 2003. This is the second year in a row that research-related income has accomplished growth in excess of 10% (20% in 2003). It was also pleasing to note MSHR achieved a ratio of \$2.84 of income for every dollar of Northern Territory Government operational support funding.

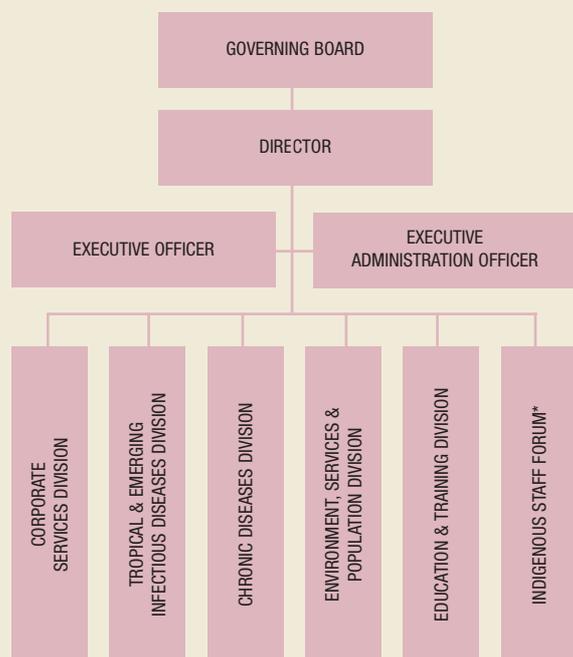
As growth of MSHR was almost exclusively in research activity and research personnel, office accommodation, information technology and administrative resources have been placed under pressure. However, it is recognised that Corporate Services must also now grow if it is to continue to maintain a high level of service.

Corporate Services also reviewed all financial reporting requirements so that financial and administrative procedures were consistent with MSHR becoming a controlled entity of Charles Darwin University.

key achievements

- Major refurbishment of laboratory space to create new office accommodation for up to 30 people, with staff expected to move into the area in early 2005.
- Ongoing development of staff intranet site to streamline communication between staff regarding research, education, and administration.
- Appointment of Charles Darwin University staff to manage MSHR information technology and helpdesk, resulting in a large improvement in the quality, service and response time of IT issues. Audit of computer hardware was conducted by CDU's Systems Administrator, to assess backup and storage functionality.
- Commenced replacement of outdated computer hardware, with 50 new desktop PCs installed.
- Accomplished archiving of over 500 boxes of MSHR records for storage in off-site, state-of-the-art, record-management facility.
- Approval and registration of a new enterprise bargaining agreement which continues to build on attractive conditions for MSHR staff.
- Introduction of MSHR sponsored QUIT program with seven staff undertaking the stop-smoking challenge.
- Introduction of new management structure which separates research-related issues and policy from general administrative issues. This new model provides the opportunity for greater input from senior academics into MSHR decisions on research matters.
- Improved readability and significant cost savings achieved from a newly designed MSHR Annual Report.
- Secured \$70,000 Commonwealth Structured Training and Employment Program funding for training and mentoring Indigenous staff working on the DRUID project.
- Appointment of a biostatistician to assist all research staff, following an extensive recruitment campaign.
- Creation of a Corporate Services support officer position multi-skilling in finance, reception, operations and laboratory support areas.

mshr structure



* INDIGENOUS FORUM STAFF ARE EMPLOYED ACROSS ALL DIVISIONS

governance

THE MENZIES SCHOOL OF HEALTH RESEARCH was established under the *Menzies School of Health Research Act 1985* to operate as a medical research institute within the Northern Territory of Australia.

The Menzies School of Health Research Act was amended on 29 August 2003, and the changes came into force on 1 January 2004. This legislation formalised MSHR as a school within the Institute of Advanced Studies of Charles Darwin University.

The legislation states that MSHR continue to operate as an independent body corporate under the control of a governing board. The Act further stipulates that Charles Darwin University be responsible for

appointing seven of the 13 board positions, thereby causing Menzies School of Health Research to become a controlled entity of the University.

MSHR is required to furnish an annual report and audited financial statements to an Annual General Meeting of the School, with financial results consolidated within those of Charles Darwin University.

MSHR accounts are subject to audit by the Auditor General of the Northern Territory. MSHR also reports to the Northern Territory Legislative Assembly through the Minister for Health and Community Services.

board members



SIMON MADDOCKS
BAGSC(HONS) PHD
MAIAST

CHAIR
(Nominee, Menzies Foundation)

Professor Simon Maddocks is the South Australian Chief Scientist, SARDI Livestock Systems, Roseworthy Campus, University of Adelaide. His research interests are in reproductive immunology and cell biology, and epigenetic influences on fetal development.

Professor Maddocks is a Director of the Board of the Sir Robert Menzies Memorial Foundation, and is the Deputy CEO of the Cooperative Research Centre for Pest Animal Control and a member of its Board.



MICHAEL MARTIN
BCOM BA GRAD DIP
GAICD

TREASURER
(Nominee, Charles Darwin University Council)

Mr Michael Martin is currently Deputy CEO of the NT Department of Corporate and Information Services. Michael was Deputy Secretary of Territory Health Services and General Manager, Royal Darwin Hospital from 1966–2000 where he worked collaboratively with Menzies School of Research. He took a particular interest in men's health especially Indigenous health. Prior to Health he worked in NT Treasury where he set up the NT Treasury

Corporation. Michael is a Fellow of the CPA Australia and has a long association with this professional group.



HELEN GARNETT FTSE,
FAICD, PSM

(Vice Chancellor, Charles Darwin University)

Professor Helen Garnett is the Vice Chancellor of Charles Darwin University.

Prior to this role, Professor Garnett was the Executive Director of the Australian Nuclear Science and Technology Organisation.

Professor Garnett has a national and international reputation for her contribution to the life sciences and the peaceful development and application of nuclear technologies. She was an Australian representative to the United Nations International Atomic Energy Agency, and has played a significant role in numerous international initiatives. She has served on committees of both the ARC and the NHMRC.



BOB WASSON

(Deputy Vice Chancellor Research, Charles Darwin University)

Professor Bob Wasson is the Deputy Vice Chancellor Research at Charles

Darwin University. His research interests are in palaeoenvironmental reconstruction, climate change on long time scales, river catchment processes in time and space, and

interdisciplinary methods.

Past positions include tutor and lecturer at Macquarie, Auckland and Monash universities, Assistant Chief in the Division of Water Resources CSIRO, and Director of the Centre for Resource and Environmental Studies at the Australian National University.



JUDITH WHITWORTH
AC, DSC, MD, PHD, BS
(MELB), FRACP, FAICD

(Nominee, Charles Darwin University Council)

Professor Judith Whitworth is the Director of the John

Curtin School of Medical Research and Howard Florey Professor of Medical Research at the Australian National University, and heads the High Blood Pressure Research Unit.

She has practised medicine and researched extensively in Australia and overseas; she was chair of the Medical Research Committee of the National Health and Medical Research Council, and is the current chair of the World Health Organization (WHO) Advisory Committee on Health Research.

board members continued



BRUCE ARMSTRONG
AM, FAA, B MED SC
(HONS), MB BS (HONS),
DPhil (OXON), FRACP,
FAFPHM

(Nominee, Charles Darwin
University Council)

Professor Bruce Armstrong is Associate Dean, Faculty of Medicine; Head of the School of Public Health; and a Medical Foundation Fellow at the University of Sydney. He graduated in biochemistry and medicine from the University of Western Australia, trained as a physician at the Royal Perth Hospital and as an epidemiologist with Sir Richard Doll at the University of Oxford.

Bruce Armstrong has variously been Professor of Epidemiology and Cancer Research at the University of Western Australia, Commissioner of Health for Western Australia, Deputy Director of the International Agency for Research on Cancer, Director of the Australian Institute of Health and Welfare, and Director of Cancer Research and Registers at The Cancer Council NSW.



PETER CAREW AM

(Nominee, Charles Darwin
University Council)

Mr Peter Carew is
Managing Director of
Integrated Technical
Services Pty Ltd, ITS

Telecommunications Pty Ltd, and a Director of Group Training NT, and Regional and Northern Maintenance Services Pty Ltd. Peter is a past President of the Chamber of Commerce NT and is currently Chair of the NT Executive of the Australian Institute of Company Directors.



SHANE HOUSTON PHD

(Nominee, Charles Darwin
University Council)

Dr Shane Houston is the
Assistant Secretary within
the Department of Health
and Community Services

with responsibility for the Office of Aboriginal Health, Family and Social Policy. He has been involved in Aboriginal affairs, particularly Aboriginal health, for more than 30 years in a variety of local, community, state, national and international roles.



ROBERT GRIEW

(Nominee, NT Minister for
Health and Community
Services)

Mr Robert Griew is Chief
Executive Officer of the
Northern Territory

Department of Health and Community Services and was previously Deputy Director General of the NSW Department of Ageing, Disability and Home Care.

His public service background spans both health and community services, from children's services, disability and aged care to public health and Aboriginal health. He has worked extensively in the Commonwealth Departments of Community Services and Health. He has also worked in the community sector, running the AIDS Council of NSW from 1998 to 2001 and consulted in health policy and organisational development.



**PETER PLUMMER BSC,
GDIPMGT, GAICD**

(Nominee, NT Minister for
Education)

Mr Peter Plummer was
appointed Chief Executive
Officer of the Northern

Territory Department of Education, Employment and Training in May 2000. Prior to that Peter was CEO of Territory Health Services, and CEO of NT Mines and Energy after having held senior executive positions in two other economic development departments in the NT. Before coming to the NT he lived and worked in Papua New Guinea for 16 years in the secondary and tertiary education sectors.



KATE GEORGE LLB

(Nominee, Menzies School
of Health Research Board)

Ms Kate George is from the
Murchison District of
Western Australia and
belongs to the Putejarra

people. She holds a law degree from the Australian National University and was admitted to practise as a barrister and solicitor in Western Australia and New South Wales. She has provided national consultancy services to private and government sectors and Aboriginal communities and has been a ministerial adviser at State and Federal levels. Kate joined the Department of Justice in 2002 as Director of Aboriginal Policy and Services.



**L VALERIE ASCHE AM,
MSC, PHD, FASM,
MAIBIOL, CBIOL**

(Nominee, Menzies School
of Health Research Board)

Dr Val Asche, a

microbiologist, was Head of the Microbiology Unit at MSHR from 1986–94, a consultant for the Northern Territory Department of Health and Community Services, and is current editor of *Recent Advances in Microbiology*.

She is also board member of the National Heart Foundation, member of the Darwin Region Institutional Biosafety Committee, Commissioner of Legal Aid, a member of the Council of the Ageing, President of ASEA-Rehab, and President of CWA NT.



**KERIN O'DEA AO BSC
PHD**

(Director, Menzies School
of Health Research)

An active research
scientist for more than 30
years, Prof Kerin O'Dea has

been Director of the Menzies School of Health Research based in Darwin since 2000. She is well known for her research showing Aborigines who returned to a traditional diet and lifestyle have a dramatic improvement in health. This work had a significant impact on the nutrition education by health workers in Indigenous communities. Throughout her career, Kerin's research focus has been on lifestyle-related chronic diseases, including obesity, diabetes and vascular disease, and Indigenous health and public health nutrition. She is a mentor for students undertaking their PhD and also an active member of numerous national committees advising government on diabetes and health and medical research.

observers on the board

SECRETARY TO THE BOARD

Mr Keith White (until June 2004)

Ms Annette Heathwood (from June 2004)

CRCAH ACTING DIRECTOR

Prof Tony Grivell

MSHR STAFF REPRESENTATIVE

Dr Peter Fagan (until September 2004)

Ms Kim Hare (from October 2004)

board committees

The Governing Board was assisted by the following committees:

FINANCE COMMITTEE

Mr Michael Martin (Chair)
Mrs Sue Bradley
Mr Peter Carew
Prof Kerin O'Dea
Mr David Morgan (Secretary from June 2004)
Mr Keith White (Secretary until June 2004)

HUMAN RESEARCH ETHICS COMMITTEE OF DHCS AND MSHR

The Very Reverend Mike Nixon (Acting Chair from Aug 2004)
Ms Jenny Abdilla
Prof Nick Anstey
Mr Ken Brown
Ms Robyn Cooke
Dr Shane Houston
Dr Shelley Walton
Mr Bob Whitehead (proxy for Robyn Cooke)
Assoc Prof Paul Kelly (from July 2004)
Mr Ray Matthews (from Aug 2004)
Ms Joy Pulley (from Aug 2004)
Ms Helen Spiers (from Dec 2004)
Mr Ian Hillock (until Oct 2004)
Ms Jill Huck (Chair until May 2004)
Dr Murray Sieffert (until Aug 2004)
Ms Denise Walsh (until Feb 2004)
Ms Linda Ward (Secretary)

DARWIN REGION INSTITUTIONAL BIOSAFETY COMMITTEE

Mrs Susan Hutton (Chair)
Dr Valerie Asche
Assoc Prof Karen Gibb
Mr Lodi Hoeben
Dr Gary Lum
Dr Lorna Melville
Dr Anna Padovan
Ms Claire Stretten (proxy for Karen Gibb)
Ms Pamela Trotman
Dr Shelley Walton
Ms Linda Ward (Secretary)

ABORIGINAL ETHICS SUBCOMMITTEE

Dr Shane Houston (Chair)
Ms Norma Bengler
Mrs Terry Dunbar
Mrs Joanne Garngulkpuy
Dr Michael Lowe
Mr Shane Motlap
Dr Ngjare Brown (from July 2004)
Mr Peter Panquee (from Oct 2004)
Dr Sandra Eades (until June 2004)
Mr Peter Thomsen (until Oct 2004)

patrons & members

OFFICIAL JOINT PATRONS

His Honour Mr Ted Egan AO,
Administrator of the Northern Territory
& Ms Nerys Evans

patrons

NORTHERN TERRITORY

The Hon Austin Asche AC QC

QUEENSLAND

Mr Ron Archer AM

VICTORIA

Sir Gustav Nossal AC CBE
Mr Charles Goode

SOUTH AUSTRALIA

The Hon John Dawkins
Prof Lowitja O'Donoghue CBE AM
Mr William Scammell CBE

TASMANIA

Dr John Hargrave AO MBE

mshr medallion recipients

Dr Valerie Asche
Miss Margaret Brewster
Father Frank Flynn MSC AC *
Mr Harry Giese AM MBE *
Prof Richard Gye AO
Dr John Hargrave AO MBE
Prof David Kemp FAA
Prof John Mathews AM
Mr Ray Norman AM
Dr Brian Reid
Dr KS Sriprakash

life members

Dr Keith Fleming
Dr Ella Stack CBE

* DECEASED

mshr honorary appointments 2004

NAME	YEARS	DATES		DETAILS	LEVEL
		FROM	TO		
DR IVAN BASTIAN	3	1/12/2002	1/11/2005	IMVS FACILITIES & EXPERTISE IN RESEARCH PROJECTS IN EAST TIMOR & INDONESIA	SRF
DR ALAN CASS	3	5/12/2003	4/12/2006	RESEARCH INTO RENAL DISEASE IN INDIGENOUS POPULATIONS	SRF
DR PETER D'ABBS	3	1/03/2002	1/02/2005	COLLABORATION ON SUBSTANCE ABUSE	SRF
ASSOC PROF MARK DANIEL	3	1/01/2002	1/12/2004	COLLABORATIVE LINKS ON COMMUNITY-BASED DIABETES PROJECT	SRF
PROF WENDY HOY	3	5/09/2003	1/08/2006	RENAL DISEASE AND INDIGENOUS POPULATIONS	PROF FELLOW
DR MATTHEW JOSE	3	12/11/2004	12/11/2007	RENAL DISEASE	SRF
MR RICHARD LUMB	3	1/12/2002	1/11/2005	MYCOBACTERIOLOGY AT IMVS & IMVS LABORATORIES FOR RESEARCH IN EAST TIMOR	RF
DR GRAEME MAGUIRE	3	1/12/2002	1/11/2005	CONTINUING COLLABORATION	RF
DR RIC PRICE	3	1/06/2002	1/05/2005	TROPICAL INFECTIOUS DISEASES	SRF
DR SUE SAYERS	3	1/10/2001	1/09/2004	ABORIGINAL BIRTH COHORT STUDY	SRF
DR KS SRIPRAKASH	3	1/06/2001	1/05/2004	STREPTOCOCCAL VACCINE	SRF
DR EMILIANA TJITRA	3	1/03/2002	1/02/2005	STRENGTHEN TIES WITH INDONESIA IN INFECTIOUS DISEASES	SRF
DR ZHIQIANG WANG	3	1/02/2003	1/01/2006	COLLABORATIVE RESEARCH IN EPIDEMIOLOGY	SRF
DR TARUN WEERAMANTHRI	3	1/12/2002	1/11/2005	PREVENTABLE CHRONIC DISEASES PROGRAM IN THE NT	SRF
DR NEVILLE WHITE	3	1/10/2001	1/09/2004	RESEARCH YOLNGU PEOPLE OF EAST ARNHAM LAND	RF
DR AL YONOVITZ	3	1/03/2001	1/02/2004	AUDIOLOGY	RF

mshr publications 2004

refereed

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Anstey N. Pathogenesis of severe malaria. National Institute of Health Research and Development, Ministry of Health, Indonesia, July, 2004.

Anstey N. Why do over a million people die of malaria each year? Department of Medicine Grand Rounds, Flinders Medical Centre, Adelaide, South Australia, September, 2004.

Bailie RS, Connors C. Tools for improving the prevention and management of chronic disease in Indigenous primary care: Developments based on NT remote community and international research. Australian Resource Centre for Healthcare Innovations Toolkit Seminar, Perth, Western Australia, 27 February, 2004.

Bailie RS, Paradies Y. Adapt or die: Epidemiology and Indigenous health research. Keynote address at the Australasian Epidemiological Association Annual Scientific Meeting, Adelaide, South Australia, 11 October, 2004.

Bailie RS. Audit for best practice in chronic disease extension: Continuous improvement approaches in the management of chronic disease. Office of Aboriginal Health, Department of Health, Western Australia, 13 July, 2004.

Brown A. Uncovering the determinants of cardiovascular disease among Indigenous Australians. Australian Cardiac Rehabilitation Association Conference, Gold Coast, Queensland, August, 2004.

Brown A. Reflections on the social determinants of Indigenous health. Social Determinants of Indigenous Health Conference. Cooperative Research Centre for Aboriginal Health, Darwin, Northern Territory, 8–12 March, 2004.

Brown A. Patterns and burdens of disease: From the Centre looking out. Australasian Society of Infectious Disease Conference, Alice Springs, Northern Territory, May, 2004.

- Brown A. Infectious diseases in the Centre: A town like Alice. Australasian Society of Infectious Disease Conference, Alice Springs, Northern Territory, May, 2004.
- Brown A. The context of cardiovascular disease among Indigenous Australians. XVIII World Congress of the International Society for Heart Research, Brisbane, Queensland, August, 2004.
- Brown A. The CASPA Study: Defining indicators for assessing the quality of care of ACS in Central Australia. CARPA Conference, Alice Springs, Northern Territory, November, 2004.
- Brown A. Indigenous male health: The battle begins in Central Australia. National AHW Conference, Alice Springs, Northern Territory, May, 2004.
- Brown A. Uncovering the determinants of cardiovascular disease among Indigenous Australians. National Heart Foundation Australia, Melbourne, Victoria, October, 2004.
- Brown A. Understanding Indigenous health disadvantage. 47th RACGP Annual Scientific Convention. Melbourne, Victoria, October, 2004.
- Burgess P, Morrison J. Place and health: Social Determinants of Indigenous Health Conference. Cooperative Research Centre for Aboriginal Health, Darwin, Northern Territory, 8–12 March, 2004.
- Cheng AC. Adjunctive G-CSF for the treatment of melioidosis. 6th World Congress of Trauma, Shock Inflammation and Sepsis, Munich, Germany, 2–6 March, 2004.
- Cheng AC. Emerging infectious diseases in northern Australia. Indo-Australian Conference on Biotechnology in Infectious Diseases, Manipal, India, 1–3 March, 2005.
- Clough AR. How does research inform drug and alcohol regulation? A personal perspective with comments on their interactions with the changing policy environment in the NT. Australian Liquor Licensing Authorities Annual Conference, Hobart, October, 2004.
- Currie B. Tropical toxinology. Ground Rounds, The Prince Charles Hospital, Brisbane, Queensland, 27 May, 2004.
- Currie B. Melioidosis: Clinical and epidemiological issues. Respiratory Unit Meeting, The Prince Charles Hospital, Brisbane, Queensland, 28 May, 2004.
- Currie B. Venomous creatures in northern Australia. The Royal College of Surgeons of England Meeting, Darwin, Northern Territory, 31 May, 2004.
- Currie B. Snakes, jellyfish and crocodiles in paradise: Gone troppo: The challenge of delivering intensive care services in remote Australia. SA/NT Regional Committee of the Australian New Zealand Intensive Care Society, 10 July, 2004.
- Currie B. Environmental change, global warming and infectious diseases in northern Australia. National Anaesthesia CME Conference, Royal Darwin Hospital, Darwin, Northern Territory, 3 July, 2004.
- Currie B. Emerging infectious diseases, global warming and environmental change in the Asia-Pacific Region. Asia Pacific Forum: Tropical Health Innovation, Cairns, Queensland, 8–10 July, 2004.
- Currie B. Epidemiological and pathogenetic findings from the Darwin prospective melioidosis study. International Conference on *Burkholderia* Pathogenesis: Approaches and Opportunities for Research on Glanders and Melioidosis, National Institutes of Health Campus, Bethesda, Maryland, USA, 2 August, 2004.
- Currie B. Rheumatic heart disease project. 8th Annual Chronic Diseases Network Conference: The Turning Tide: Action and Improvements in Chronic Disease, Darwin, Northern Territory, 23–24 September, 2004.
- Currie B. Melioidosis. Annual Northern Territory Centre for Disease Control Workshop 2004, Darwin, Northern Territory, 12–14 October, 2004.
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- Currie B. Scabies and streptococcal diseases; Tropical toxinology: Snake-bite and jellyfish stings; and Recent advances in melioidosis. 16th Annual Kimberley Medical Conference and KDGP Annual General Meeting, Broome, Western Australia, 27–28 November, 2004.
- Currie B. Best practice clinical guidelines for the secondary prevention and treatment of rheumatic fever and rheumatic heart disease. National Heart Foundation of Australia and the Cardiac Society of Australia and New Zealand, Melbourne, Victoria, 24 November, 2004.
- Leach A. Pneumococcal conjugate vaccines in special populations. 4th International Symposium on Pneumococci and Pneumococcal Diseases (ISPPD4), Helsinki, Finland, May, 2004.
- O'Dea K. Fish and human health. The New Zealand Seafood Industry Council, Christchurch, New Zealand, 27–28 May, 2004.
- O'Dea K. The therapeutic potential of the hunter-gatherer diet. Presented on behalf of Kerin O'Dea by Dr Kuhnlein. International workshop on food systems of Indigenous populations. Rockefeller Centre, Bellagio, Italy, 24–27 July, 2004.
- O'Dea K. The traditional diet and food preferences of Australian Aboriginal hunter-gatherers: What can we learn? New Zealand Dietitians Annual Conference, Dunedin, New Zealand, 1–3 September, 2004.
- O'Dea K. Menzies School of Health Research: Leadership in Indigenous, remote and tropical health research. Menzies Foundation 25th Anniversary, Melbourne, Victoria, 25 November, 2004.
- O'Dea K. Unhealthy ageing: Preventable chronic disease in Indigenous Australians. National Ageing Research Institute, Annual General Meeting, Melbourne, Victoria, 21 October, 2004.
- O'Dea K. The case for diet in the prevention and treatment of chronic diseases: Implications for remote Indigenous populations. Council for Remote Area Nursing of Australia, Annual Conference, Perth, Western Australia, 26–27 September, 2004.
- O'Dea K. Tackling chronic disease: How research can inform future strategies. Chronic Disease Network Conference, Darwin, Northern Territory, 23 September, 2004.
- O'Dea K. The Mediterranean diet in the prevention of cardiovascular disease. Grand Round, Royal Perth Hospital Research Week, Perth, Western Australia, 4–6 August, 2004.
- O'Dea K. The preventive potential of the Mediterranean diet. Royal Perth Hospital Annual General Practice Seminar, Perth, Western Australia, 4–6 August, 2004.
- O'Dea K. Diabetes and related conditions in Indigenous populations: Epidemiology and community-based interventions. School of Medicine and Pharmacology Seminar, University of Western Australia, Perth, Western Australia, 4–6 August, 2004.
- O'Dea K. Tackling the problem of diabetes in Indigenous populations in Australia. Diabetes, the Benefits of Prioritisation, International Diabetes Institute/Australian Academy of Sciences Symposium, Melbourne, Victoria, 29 July, 2004.
- O'Dea K. Diabetes and related conditions in Australian population groups: Recognising the heterogeneity. Australia's Health: Vital Statistics, Vital Signs, Canberra, ACT, 22–23 June, 2004.
- O'Dea K. The case for diet in the prevention of cardiovascular disease. The Silagy Seminar series, Monash University, Melbourne, Victoria, 1 April, 2004.
- Walton SF. Itchy and scratchy: What's new in scabies research. Queensland Institute of Medical Research seminar series, Brisbane, Queensland, May, 2004.

research funding

competitive research grants awarded during 2004

Funder	Investigator	Grant type	Funding initiative	Title	Years funded	Total \$
Alcohol Education & Rehabilitation Foundation (AERF) G0593/D708	MAGEL Tricia	Project		Alcohol and other drug misuse and psychosis: Development of a relapse prevention strategy in remote Indigenous communities	1/07/2004–30/06/2008	\$10,000
CardioVascular Lipid (Pfizer Australia)	BROWN Alex	Project		Comparison of the quality and outcomes of secondary prevention for Indigenous and non-Indigenous patients after acute coronary syndromes in the Northern Territory (Phase II)	1/01/2005–31/12/2005	\$50,600
CardioVascular Lipid (Pfizer Australia)	BURGESS C Paul	Project		Evaluation of a community-initiated intervention and prevention activity to reduce cardiovascular risk in Indigenous Australians	1/01/2005–31/12/2005	\$54,497
CardioVascular Lipid (Pfizer Australia)	SINGH Gurmeet	Project		Risk of heart disease for Aboriginal adolescents	1/01/2005–31/12/2005	\$52,878
Channel 7 Children's Research Foundation of SA Inc	WALTON Shelley, CURRIE Bart	Project		The role of T cells in the allergic type response to scabies (Year 2)	1/07/2003–30/06/2005	\$90,000
Commonwealth Dept of Health and Ageing	O'DEA Kerin	Project	Diabetes Prevention Pilot Initiative	Interventions to reduce the risk of rapid weight gain in young Aboriginal adults in a remote community in North-East Arnhem Land	1/06/2004–1/06/2006	\$204,082
NHMRC 320851	EADES Sandra, SANSON-FISHER Robert, PANARETTO Kathryn, WENTONG Mark	Project		A randomised controlled trial of a high intensity intervention to reduce smoking among pregnant Indigenous women	1/01/2005–31/12/2007	\$685,500
NHMRC 320858	MORRIS Peter, SLADE Gary, ROBERTS-THOMSON Kaye, LEACH Amanda, BAILIE Ross	Project		Development and evaluation of a primary health care model to prevent dental decay in Aboriginal pre-school children (FLAVOR)	1/01/2005–31/12/2008	\$1,465,750
NHMRC 320860	O'DEA Kerin, HOY Wendy, ROWLEY Kevin, BEST James, WANG Zhiqiang	Program		Health outcomes monitoring and evaluation: Learning about activity, nutrition, diet and social factors (HOMELANDS)	1/01/2005–31/12/2009	\$7,070,585
NHMRC 320866	KELLY Paul	Career Development	Population Health	Building locally appropriate health systems to deliver TB control programs: Bridging the gap between operational research, public health education, policy and practice in Australia and in countries to our near north	1/01/2005–31/12/2009	\$305,375
NHMRC 320869	ISBISTER Geoffrey	Career Development	Clinical	Prospective evaluation of terrestrial and marine envenoming in humans: Clinical effects, predictors of severity, toxicokinetics and potential treatments	1/01/2005–31/12/2009	\$486,250
NHMRC 333412	RUSSELL Bruce	Training Fellowship	Howard Florey Centenary	<i>Plasmodium vivax</i> culture and its application to understanding the biology of chloroquine-resistant <i>P. vivax</i>	1/01/2005–31/12/2008	\$171,000
NHMRC 333414	CLOUGH Alan	Training Fellowship	Public Health	Improving the evidence base for policies and strategies to reduce harm from alcohol and other substance use in northern Australia and surrounding regions	1/01/2005–31/12/2008	\$264,000
NHMRC 333416	BURGESS C Paul	Scholarship	Public Health	Healthy land, healthy people: Exploring the health benefits of Aboriginal natural resource management in northern Australia	1/01/2005–1/01/2006	\$60,028
NHMRC 333417	JOHNSTON Fay	Scholarship	Public Health	Health effects of bushfire smoke in the Australian monsoon tropics	1/01/2005–31/12/2006	\$60,028

financial overview

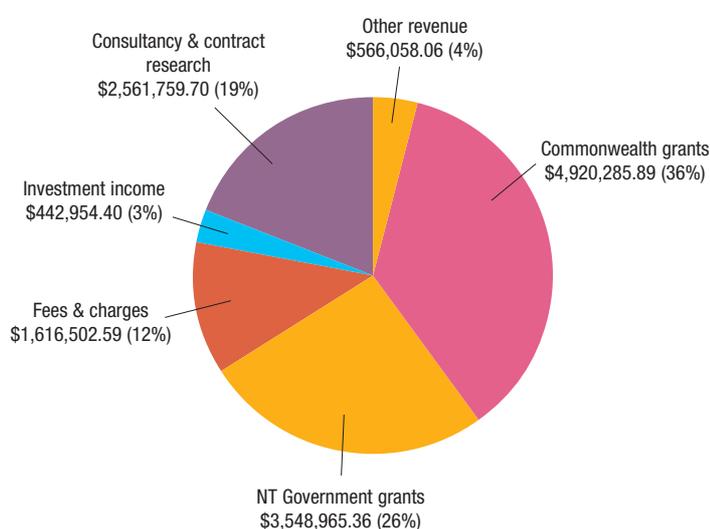
1 January 2004–31 December 2004

	2004	2003	2002	% change 2004–03	Notes
Income	\$13,656,526	\$11,962,385	\$9,941,384	14.16%	1
Expenditure	\$12,058,220	\$9,977,443	\$8,425,127	20.65%	2
Net surplus	\$1,598,306	\$1,984,942	\$1,516,257	(18.44)%	3
Net assets	\$9,573,735	\$7,900,364	\$5,818,042	21.44%	4
Staff (full-time equivalents)	95	95	79	–	5

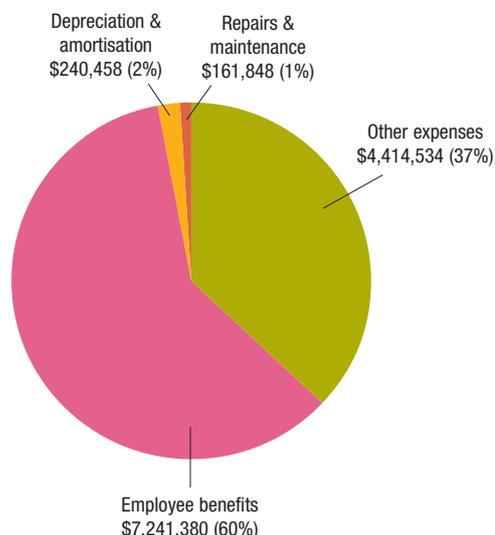
NOTES

- 1 Increase in income is attributed to a 29.9% increase in revenue related to competitively awarded research grants.
- 2 Increase is directly related to increased research activity.
- 3 Audited net surplus includes revenue received for research projects that have a life beyond the end of the financial year.
- 4 Net assets include cash balances that, under agreed funding conditions, are committed to future research activities.
- 5 Actual staff numbers have increased. The constant FTE represents that more employees are employed part-time and the increase in collaborative research projects with external research partners.

income



expenditure



donations

Estate of the late Mr Charles McKay	\$53,185
Wyeth Australia Pty Ltd	\$10,000
Mr R & Mrs S Maple-Brown	\$5,000
Mrs Sheila Frey	\$1,000
Reserve Bank of Australia	\$1,000
Dr Val Asche	\$200
Dr Ella Stack	\$150

Copies of the Menzies School of Health Research audited 2004 Financial Statements are available at our website: www.menzies.edu.au

A printed version is available by phoning Menzies School of Health Research on **08 8922 8196**.

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